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The role of satellite accounting within the national accounts

Introducing the Outdoor Recreation Satellite Account

Prepared by United States Bureau of Economic Analysis[1]

Summary

The Outdoor Recreation Satellite Account (ORSA) is a collaborative effort to measure the impact of outdoor recreation on the U.S. economy. This paper describes the efforts undertaken by the Bureau of Economic Analysis to develop such a satellite account. It also highlights specific challenges related to data sources and methodology and provides prototype results.

[1] Prepared by Mark de Haan and Joseph Haynes. Please send your questions or comments to mark.dehaan@cbs.nl or j.haynes@cbs.nl. The authors would like to thank Dirk van den Bergen, Tihomira Dimova, Henk Nijmeijer, Paul Konijn Rami Peltola and Piet Verbiest for their excellent comments.

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I. Introduction

1. The Outdoor Recreation Satellite Account (ORSA) is a collaborative effort to measure the impact of outdoor recreation on the U.S. economy. Using input from outdoor recreation economists, industry experts, and multiple government agencies, the Bureau of Economic Analysis (BEA) can now show the size of the U.S. outdoor recreation economy. Specifically, the ORSA provides an estimate of the outdoor recreation economy's contribution to current dollar gross domestic product (GDP) and illustrates the contributions of individual industries to the outdoor recreation economy. In addition to GDP, the ORSA also provides gross output, compensation, and employment estimates for the outdoor recreation economy.

2. "Businesses need the right data to help them hire, invest and grow. The historical lack of detailed federal data regarding outdoor recreational activities has handicapped both the private and public sectors. The public will no doubt be surprised at the economic importance of this industry as we release prototype statistics measuring the impact of activities like boating, fishing, RVing, hunting, camping, hiking, and more. This release is a milestone for business executives, small-business owners, entrepreneurs, and government officials, who will rely on these detailed data to plan, grow, and gain new insights into this dynamic part of the U.S. economy," said U.S. Commerce Secretary Wilbur Ross about the new ORSA statistics (U.S. Department of Commerce 2018).

3. The newly released prototype statistics show that the outdoor recreation economy represented 2.0 percent ($373.7 billion) of current-dollar GDP in 2016 and supported more than 4.2 million jobs. The next section highlights other significant findings from the prototype statistics. The rest of the paper provides an overview of this satellite account, including an explanation of the data and methodology used to develop the statistics, and concludes with a description of the next steps of the project.

II. Outdoor Recreation Satellite Account Prototype Results

4. In 2016, outdoor recreation accounted for 2.0 percent of current-dollar GDP, comparable in size to both the mining and utilities industries (chart 1). In addition, the outdoor recreation economy grew 3.8 percent in 2016 dollars, faster than the 2.8 percent growth for the overall economy. Similarly, the average annual growth rate from 2012–2016 using current-dollars was 4.4 percent for the outdoor recreation economy versus 3.6 percent for the overall economy.

5. Value added by industry. The outdoor recreation economy contributed $373.7 billion to current-dollar GDP in 2016. Gross domestic product is the value of the goods and services produced by the nation's economy less the value of the goods and services used up in production, and an industry's value added represents its contribution to GDP. The top industry contributor to GDP was retail trade, which contributed $81.7 billion, or 22 percent of all activity, to the total outdoor recreation economy in 2016 (chart 2). The next largest industries were accommodation and food services ($55.7 billion); arts, entertainment, and recreation ($47.4 billion); transportation and warehousing ($34.9 billion); and nondurable-goods manufacturing ($28.5 billion).

6. Gross output by activity and industry. Total gross output for the outdoor recreation economy was $673.2 billion in 2016. Gross output is principally a measure of sales or revenue from production for most industries. The single largest activity was motorized vehicles, with a gross output of $59.4 billion (chart 3). The motorized vehicles category comprises RVs, which represent about half of the category's gross output, on-road and off-road motorcycles, snowmobiles, ATVs, and driving for pleasure (table 2). The next largest activities in 2016 were boating/fishing ($38.2 billion); game areas, including golf and

tennis ($36.2 billion); guided tours/outfitted travel ($26.5 billion); and festivals/sporting events/concerts ($26.5 billion). Additionally, trips and travel ($230.5 billion) and multi-use apparel and accessories ($92.6 billion) proved to be significant contributors to gross output in 2016.

7. Retail trade was the largest industry in terms of gross output for the outdoor recreation economy, accounting for $136.7 billion in 2016 (table 3). The next largest industries were accommodation and food service ($89.7 billion); arts, entertainment, and recreation ($88.1 billion); nondurable-goods manufacturing ($71.7 billion); and transportation and warehousing ($65.7 billion).

8. Employment and compensation by industry. In 2016, the outdoor recreation economy generated 4.3 million jobs. This is similar to the hospital industry (4.7 million) and the transportation and warehousing industry (4.7 million) (chart 4). The top five industries for outdoor recreation employment were retail trade (1.3 million); accommodation and food services (1.0 million); arts, entertainment, and recreation (0.9 million); state and local government (0.2 million); and transportation and warehousing (0.2 million) (table 5).

9. Compensation (wages and benefits) for the outdoor recreation economy was $203.6 billion in 2016 (table 4), similar to compensation for the computer systems design and related services industry ($246.6 billion) and more than the real estate and rental industry ($141.0 billion). As with employment, the retail trade sector was the largest industry contributor to outdoor recreation compensation ($41.5 billion).

III. Overview of the Outdoor Recreation Satellite Account

10. The ORSA joins BEA's growing suite of satellite accounts that provide detailed information on key sectors of the U.S. economy, such as health care, travel and tourism, and arts and culture. Satellite accounts provide complementary statistics that do not change official U.S. economic statistics, including GDP. Instead, these satellite accounts provide additional detail and allow for a more in-depth analysis of their sector or aspect of the economy. The prototype ORSA statistics are a first step of the "Outdoor Recreation Jobs and Economic Impact Act of 2016," which directed the Secretary of Commerce to "enter into a joint memorandum with the Department of Agriculture and the Department of the Interior to conduct, acting through the Bureau of Economic Analysis, to assess and analyze the outdoor recreation economy of the United States and the effects attributable to it on the overall U.S. economy."

11. The ORSA was built using BEA's comprehensive supply-use tables, which provide insight into the internal workings of the U.S. economy and detail the contribution of specific industries and commodities to GDP. The data detail the flows of goods and services purchased by each industry, the incomes earned from production in each industry, and the distribution of sales for each commodity. The goal of the ORSA is to highlight the outdoor recreation production and spending that is already present in the supply-use tables. In practice, the ORSA is a rearrangement of the current data to isolate outdoor recreation spending and production. For example, the ORSA shows the production of apparel used specifically for outdoor recreation activities, such as wet suits and hiking boots, while the supply-use tables show the production of all apparel regardless of use. Likewise, construction spending on outdoor recreation such as construction of tennis courts and baseball diamonds is already embedded in the supply-use tables, and the ORSA simply isolates such spending.

IV. Defining outdoor recreation

12. The term "outdoor recreation" spans many activities, from traditional activities like camping and hiking to more casual outdoor activities like gardening and outdoor festivals (Cordell 2012; Godbey 2009). To meet the diverse needs of data users, the ORSA was designed to capture both the conventional and comprehensive conception of outdoor recreation. The conventional viewpoint reflects more traditional outdoor recreation activities, such as hunting, hiking, camping, and fishing. More formally, conventional outdoor recreation is defined by BEA as "all recreational activities undertaken for pleasure that generally involve some level of intentional physical exertion and occur in nature-based environments outdoors." The comprehensive definition attempts to encompass the broader viewpoint of outdoor recreation and is defined by BEA as "all recreational activities undertaken for pleasure that occur outdoors." BEA staff worked closely with outdoor recreation experts from academia, government, and private industry to develop these definitions to serve as a foundation for the ORSA. These definitions also reflect public input received by way of a Federal Register Notice, a public email address (OutdoorRecreation@bea.gov), and multiple BEA blog posts directly soliciting feedback. The definitions allow for new activities that may emerge in the future to be included in any forthcoming iterations of the ORSA. See annex II table 1 for the activities captured in each definition of outdoor recreation.

V. Outdoor recreation goods and services

13. The supply and use tables maintained at BEA include detailed information regarding the goods and services produced and used across the U.S. economy. The goods and services ultimately included as part of the ORSA were chosen from BEA's comprehensive list of nearly 5,000 categories of goods and services. The commodities chosen as in-scope to the outdoor recreation economy reflect research and reports about the outdoor recreation economy as well as feedback from outdoor recreation economists and experts in the private sector, academia, and federal agencies that serve as stewards of public lands and waterways.[2] The chosen commodities fell into two categories: (1) core goods and services purchased directly for outdoor recreation and (2) supporting goods and services that provide access to outdoor recreation. The core category includes gear, equipment, fuel, concessions, maintenance, repair, and fees related to outdoor recreation activities. Gear and equipment include products such as boats, fishing rods, and helmets. Fuel refers to the fuel used to operate recreational vehicles, boats, and planes. Concessions refer to food and drinks sold by outdoor recreation site operators, such as at outdoor sporting events. Maintenance and repair refer to upkeep of outdoor recreation equipment, including recreational vehicles and some equipment (for example, bicycles). Fees refer to expenditures on storage and docking, equipment rental, lessons, event admission, insurance, financing, and veterinarian services. The supporting category includes trips and travel, construction, and government expenditures. Trips and travel includes spending on food, beverages, lodging, transportation, souvenirs, and shopping as part of an outdoor recreation trip. Construction includes spending on outdoor recreation structures, such as tennis courts and bike trails. Government expenditures include federal, state, and local government spending that support outdoor recreation activities, such as maintaining hiking trails in a national park.

[2] These federal agencies include U.S. Forest Service, National Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management, Bureau of Reclamation, U.S. Army Corps of Engineers, and National Oceanic and Atmospheric Administration.

VI. Developing Statistics by Industry

14. Gross output by industry and GDP (value added) by industry are both published as part of BEA's outdoor recreation satellite account, and both sets of statistics provide important insights into an industry's contribution to the overall economy. Gross output of an industry is the market value of the goods and services produced by an industry, including commodity taxes. The components of gross output include sales or receipts, other operating income, commodity taxes, and inventory change. Gross output differs from value added, which measures the contribution of the industry's labor and capital to its gross output. Value added is also defined as the difference between gross output and intermediate inputs. Value added summed across all industries is equal to GDP for the overall economy. Intermediate inputs are the foreign and domestically produced goods and services used up by an industry in the process of producing its gross output.

15. For the commodities chosen as in-scope to outdoor recreation, various data sources were used to identify the share of each commodities' gross output specific to outdoor recreation activities. Recreational goods and services, such as fishing rods and guided tours, are often identifiable directly from data underlying BEA's industry economic accounts and so the entire value of that commodity is included in the ORSA. However, many outdoor recreation commodities can also be used for indoor recreation or for non-recreational purposes. BEA used a variety of data to estimate the portion of output specific to outdoor recreation for in-scope goods and services. Many private industry reports were used to estimate recreational use, such as a survey commissioned by PeopleForBikes that shows the percentage of people who ride bicycles for recreation versus solely for commuting (Corona Insights 2017). Proprietary retail sales data were also used to determine spending for many water and winter activities, such as snorkeling and skiing. Participation rates were also used to distinguish between indoor and outdoor use of goods and services for activities that occur in both settings, such as soccer. Annex II table 2 lists many of the external data sources used to develop the prototype statistics.

16. The supply and use tables identify which industries produce the commodities chosen as in-scope for the outdoor recreation economy. Outdoor recreation gross output by industry represents the share of each in-scope commodity's gross output that is specific to outdoor recreation for every industry that produces the commodity. Value added for outdoor recreation is derived from the relationship between the industry output for outdoor recreation and total industry output. This means the ratio of intermediate consumption associated with the industry output for outdoor recreation is assumed to be the same as the ratio of total industry intermediate consumption to total industry output. Employment and compensation for outdoor recreation are derived through the same procedure as value added. Specifically, the ratio of an industry's outdoor recreation output to total output is applied to total employment and compensation for the industry.

VII. Developing Statistics by Activity

17. In addition to BEA's standard presentation of gross output by industry using the North American Industry Classification System, gross output is also presented by outdoor recreation activity for core goods and services (gear, equipment, fuel, concessions, maintenance, repair, and fees). The ORSA was designed so users can track gross output for specific activities in a transparent manner. To do this, activities were split into mutually exclusive categories when source data allowed or combined into a single category containing related activities. For example, the category camping/climbing/hiking was created to avoid double-counting the many items that can be used across these activities. Additionally, a separate category was created for RVs because of the various uses for RVs outside of camping. Another example is the category boating/fishing, which was created

because of the overlap between these activities. Specifically, past research shows that about half of people who fish do so on boats (U.S. Coast Guard 2011), and only a small portion of total expenditures by people who fish is on fishing equipment (U.S. Department of the Interior 2016). Given the overlap between boating and fishing, these activities were combined into a single category for the prototype satellite account. A final example is the category guided tours/outfitted travel, which contains all outdoor recreation activities that occur as part of an organized or guided tour, including sunset sailboat tours and guided horseback trail rides. To prevent double-counting, a sunset sailboat tour is part of the guided tours category, not the boating/fishing category. Likewise, the guided horseback trail rides are only part of guided tours, not the equestrian category.

18. All activity-specific core goods and services were allocated to individual activities (for example, skis were allocated to skiing). Footwear, equipment bags, uniforms, wet suits, swimsuits, personal safety equipment, and gloves were also allocated to individual activities. In cases where the items were too general to allocate to individual activities, items were separated into a multi-use apparel and accessories category for both the conventional and comprehensive definitions of outdoor recreation. This includes coolers, lighting, GPS devices, backpacks, sunscreen, bug spray, watches, sports racks, hydration equipment, and general outdoor clothing.

19. Supporting goods and services (trips and travel, construction, and government) for recreational activities overlap for many activities. For example, a single outdoor recreation trip may encompass multiple activities, such as camping, wildlife watching, and fishing. Similarly, construction of outdoor fields and parks supports multiple types of outdoor recreational activities, as do government-run parks and forests. For this reason, supporting recreational goods and services are not allocated to individual activities and are presented in an aggregate supporting outdoor recreation category.

20. Outdoor recreation trip and travel expenses are methodologically consistent with BEA's Travel and Tourism Satellite Accounts (TTSA). Outdoor recreation trips are defined as travel that occurs at least 50 miles from home, corresponding to the definition used in the TTSA. The definitions, framework, and estimating methods used for the TTSA follow the guidelines developed by the United Nations World Tourism Organization (WTO) and the Organisation for Economic Co-operation and Development (OECD) for similar travel and tourism accounts. Outdoor recreation trip and travel expenses specifically include food and beverages (groceries and restaurants), lodging, transportation (including fuel), and souvenirs and shopping. Information from the U.S. Department of Transportation's Federal Highway Administration 2009 National Household Travel Survey and other travel surveys were used to determine the portion of travel related to outdoor recreation trips. Construction spending comes from a special Census Bureau tabulation on the value of construction put-in-place for outdoor recreation structures, such as marinas and tennis courts. Federal government spending encompasses expenditures by federal agencies that serve as stewards of public lands and waterways, specifically, the portion of each agency's budget that is directly related to supporting outdoor recreation activities. State and local government spending represents the entirety of state and local budgets for parks and recreation.

VIII. Next Steps for the Outdoor Recreation Satellite Account

21. The estimates described in this article reflect prototype or experimental statistics that will be followed by a final release in September 2018. BEA asks for feedback from data users and other stakeholders regarding the definitions and activities included in the ORSA, and any other comments that users think may be relevant to the development of this satellite account. BEA developed this account under a 2-year interagency agreement with the Department of Interior and other federal agencies that serve as stewards of public land and

waterways and as stipulated in the "Outdoor Recreation Jobs and Economy Act of 2016." After publishing the final national estimates in September 2018, BEA will endeavor to produce state estimates and other extensions to this satellite account subject to time, data, resource, and funding constraints.

Annex I

Chart 1

Outdoor Recreation as Percent of GDP with Comparable Industries (2016)

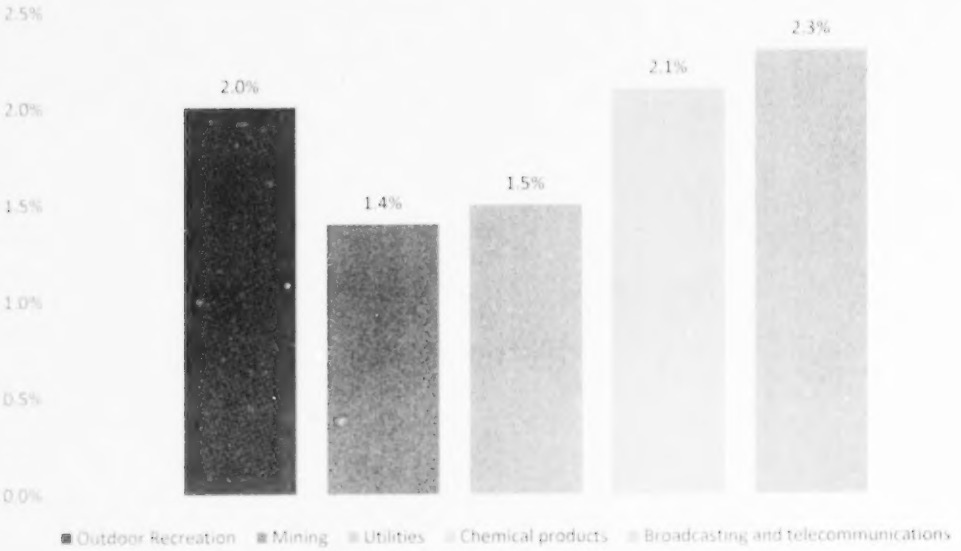


Chart 2

Industry Composition of Outdoor Recreation Value Added (2016)

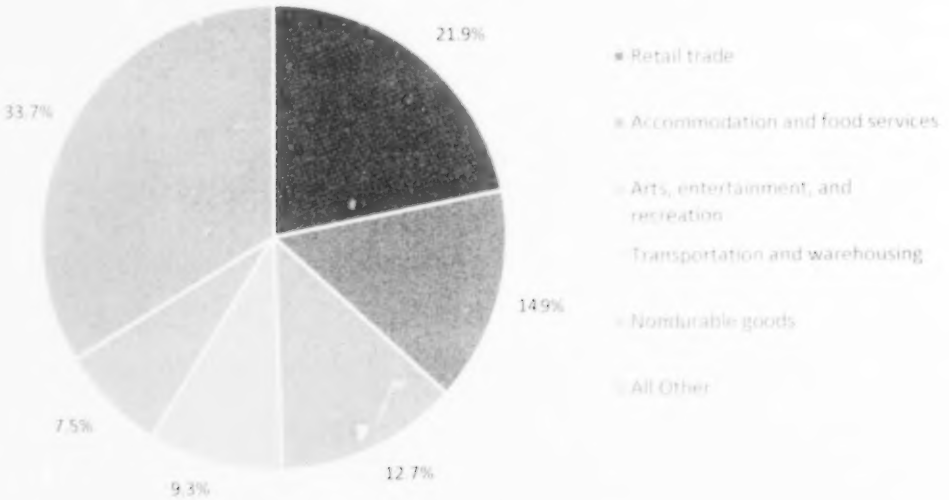
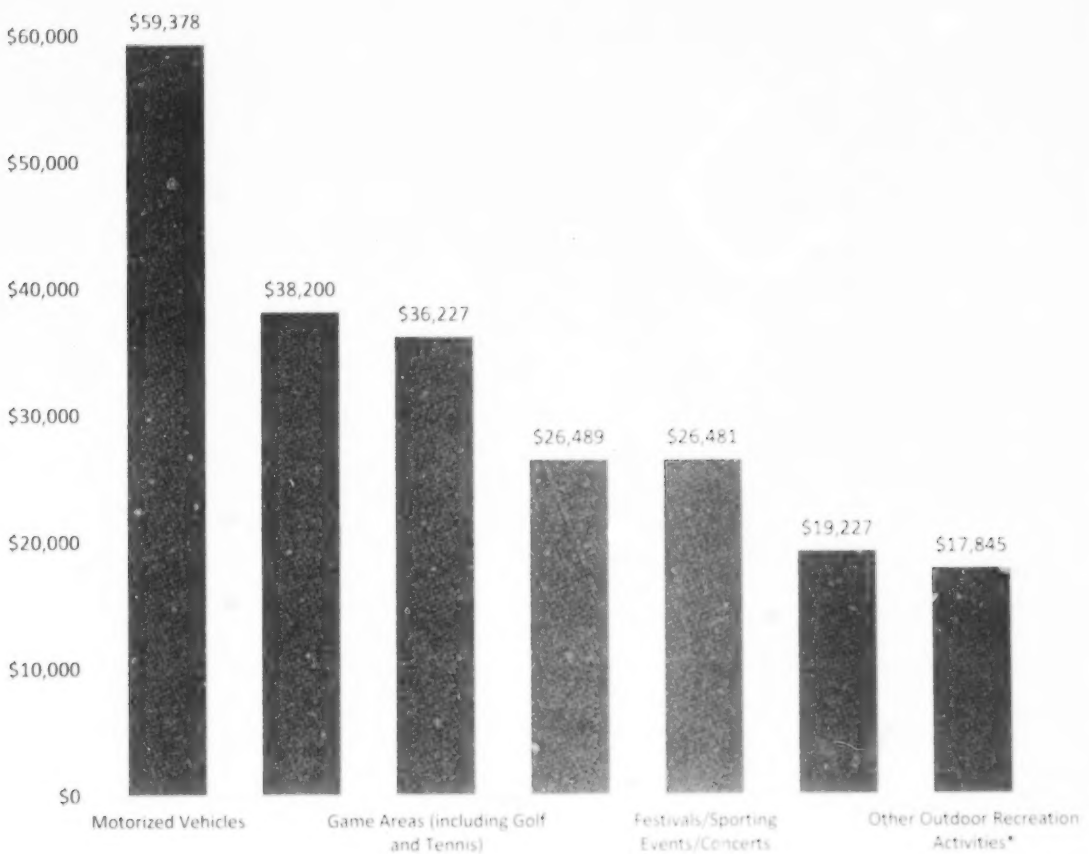


Chart 3

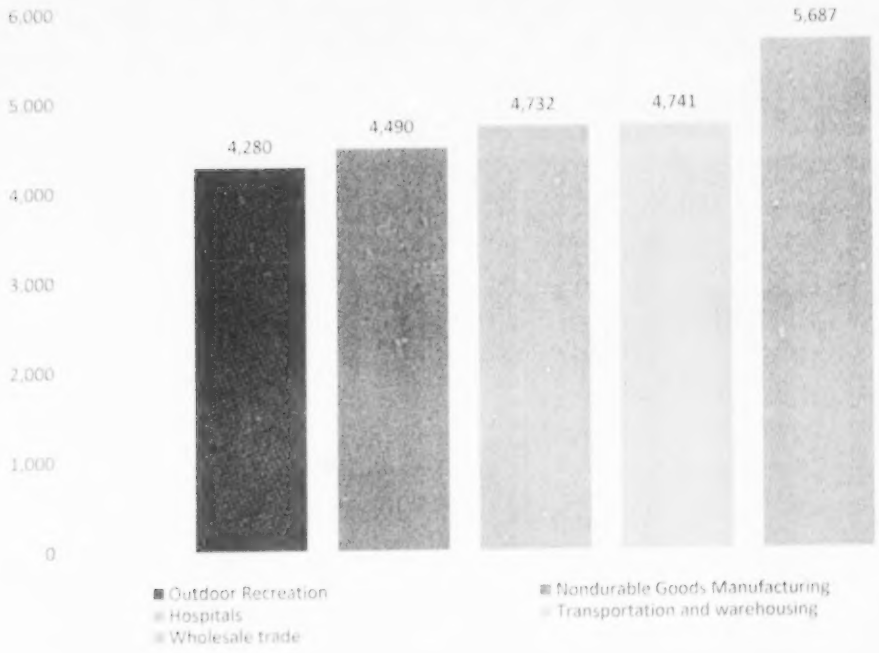
Outdoor Recreation Gross Output by Activity (millions of 2016 dollars)



*Includes agritourism, augmented reality games, beachgoing, disc golf, hot springs soaking, kite flying, model airplane/rocket/UAV, paintball, photography, stargazing/astronomy, swimming, therapeutic

Chart 4

Outdoor Recreation Employment and Comparable Industries in 2016 (thousands of jobs)



Annex II

Table 1
Activities in the Outdoor Recreation Satellite Account Prototype

Activities in Conventional Definition	*Activities in Comprehensive Definition*
Air sports (base jumping, hang gliding, skydiving)	Agritourism (animal sanctuaries, petting zoos, pick-your-own produce farms, winery tours)
Bicycling (BMX, mountain, on-road)	Amusement parks/water parks
Boardsailing/windsurfing	Augmented reality games
Boating/fishing (canoeing, fishing, inboard/outboard, kayaking, personal watercraft, sailing)	Beachgoing
Camping/climbing/hiking	Disc golf
Dog mushing	Festivals/sporting events/concerts
Equestrian	Field sports (e.g., football, lacrosse, soccer)
Geocaching/orienteering/rock hounding	Game area sports (e.g., basketball, golf, tennis)
Hunting/trapping/shooting (including archery)	Guided tours/outfitted travel
Ice skating	Hot springs soaking
Inline skating	Kite flying
Land/sand sailing	Model airplane/rocket/UAVs
Motorized vehicles (ATVs, driving for pleasure, motorcycling, off-roading, RVing, snowmobiling)	Paintball
Races (including endurance racing)	Photography
Recreational flying (experimental, glider, turboprop, ultralight)	Productive activities (beekeeping, foraging, gardening, panning for ore)
Running/jogging/walking	Stargazing/astronomy
Scuba diving	Swimming
Skateboarding	Therapeutic programs
Skiing	Water polo
Snorkeling	
Snow tubing/sleighing	
Snowboarding	
Stand-up paddling	
Surfing	
Tubing/wakeboarding	
Water skiing	
Whitewater rafting	
Wildlife watching/birding	

Table 2
Examples of External Data Sources Used to Develop the Outdoor Recreation Satellite Account

American Horse Council
American Sportfishing Association
Archery Trade Association
General Aviation Association
International Snowmobile Manufacturers Association
Motorcycle Industry Council
National Bicycle Dealers Association
National Marine Manufacturers Association
National Shooting Sports Foundation
National Sporting Goods Association
Outdoor Industry Association
PeopleforBikes
Pollstar
Propriety Point-of-Sale Retail data
Recreational Vehicle Industry Association
SnowSports Industries America
Sports & Fitness Industry Association
The Outdoor Foundation
U.S. Bureau of Labor Statistics
U.S. Census Bureau
U.S. Department of Agriculture
U.S. Department of the Interior
U.S. Department of Transportation

Annex III [English only]

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